

P-5550-1-C1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: Thomas J. Kennedy, III et al.

Serial No.: 09/877,600

Examiner: R. Gordon

Filing Date: June 8, 2001

Group Art Unit: 3711

For: GOLF BALL WHICH INCLUDES FAST-CHEMICAL-REACTION
PRODUCED COMPONENT AND METHOD OF MAKING SAME

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Commissioner for Patents
P.O. Box 1450
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Sir:

AMENDED APPEAL BRIEF UNDER 37 C.F.R. § 1.192

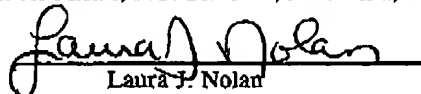
This Amended Appeal Brief is in furtherance of the Notice of Appeal filed February 13, 2003 and the Notice of Non-Compliance mailed on June 13, 2003.

Appellant believes that no fees are required, but if any fees required under § 1.17, Appellant authorizes the Commissioner of Patents to charge any fees to Deposit Account No. 17-0150.

Appellants file herewith an Appeal Brief in connection with the above-identified application, wherein claims 1 to 48 were finally rejected in the Office Action of November 14, 2002. What follows is Appellant's Amended Appeal Brief in accordance with 37 C.F.R. § 1.192(d).

CERTIFICATION UNDER 37 C.F.R. 1.8

I hereby certify that this Appeal Brief and the documents referred to as attached therein are being transmitted by facsimile on this date June 18, 2003, to TC3700 at 703-872-9303 addressed to: Attention: Board of Patent Appeals and Interferences, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.


Laura J. Nolan

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I. REAL PARTY IN INTEREST (37 C.F.R. § 1.192(c)(1))

The real parties in interest in this appeal are the inventors named in the caption of this brief (Thomas J. Kennedy, III et al.) and the assignee, Spalding Sports Worldwide, Inc. Appellant notes that a name change to change the assignee to "The Top-Flite Golf Company" was filed by facsimile on June 2, 2003, but the Notice of Recordation has not yet been received.

II. RELATED APPEALS AND INTERFERENCES (37 C.F.R. § 1.192(c)(2))

Currently, it is believed that there are no other appeals or interferences in process or pending before the U.S. Patent and Trademark Office from which the present application bases its priority, or any case which bases its priority upon the present application, that will directly affect or be affected by or have a bearing on the Board's decision in this Appeal.

Appellant notes that U.S. Application Serial No. 09/690,487 filed October 17, 2000 is currently under appeal before the U.S. Patent and Trademark Office. The above-mentioned application claims priority from one of the applications upon which the present application claims priority. Although the present application is not directly related to the above-mentioned application, Appellant cites those cases in order to bring them to the Board's attention.

III. STATUS OF CLAIMS (37 C.F.R. § 1.192(c)(3))

The status of claims set forth after the Final Office Action mailed November 14, 2002 and an Advisory Action mailed January 23, 2003 was, and is, as follows:

Allowed claims: none

Rejected claims: 1 to 48

The present appeal is directed specifically to claims 1 to 48.

IV. STATUS OF AMENDMENTS (37 C.F.R. § 1.192(c)(4))

In the Final Office Action of November 14, 2002, claims 15, 42 and 45 were rejected under 35 U.S.C. §112, second paragraph as being indefinite; claim 16 was rejected under 35 U.S.C. §102(b) as being anticipated by

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Newcomb (U.S. Patent No. 4,695,055); claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 were rejected under 35 U.S.C. §103(a) as being unpatentable over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055); claims 13, 14, 18, 19, 41 and 44 were rejected under 35 U.S.C. §103(a) as being unpatentable over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Bayer - RIM Part and Mold design (polyurethanes); claim 34 was rejected under 35 U.S.C. §103(a) as being unpatentable over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Molitor (U.S. Patent No. 4,674,751); claims 16 to 21, 23, 25, 29 to 36, 38 to 41, 43, 44 and 48 were provisionally rejected under 35 U.S.C. §101 as claiming the same invention as that of claims 14 to 20, 22, 27 to 32, 34 to 41 and 44 of copending Application No. 09/040,798; and claims 1 to 15, 22, 24, 26 to 28, 37, 42 and 45 to 47 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 13, 21, 23 to 26, 33, 42 and 43 of copending Application No. 09/040,798.

There is one unentered amendment. A Response to Final Office Action was filed on January 14, 2003, and the response proposed an amendment to claims 15, 16, 42 and 45. The Advisory Action of January 23, 2003 stated that the proposed response would overcome the rejection under 35 U.S.C. 112, second paragraph (to claims 15, 42 and 45).

V. SUMMARY OF THE INVENTION (37 C.F.R. § 1.192(c)(5))

The present invention is directed to a process for making a golf ball comprising forming at least one of a cover and a core component of the golf ball by mixing two or more reactants together to produce a reaction product having (i) a flex modulus of from about 1 to about 310 Kpsi, and (ii) a reaction time of less than 2 minutes, wherein the at least one of the cover and the core component formed from said mixing operation has a thickness of at least about

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0.01 inches (claims 1). The present invention is also directed to a multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea (claim 16). Independent claims 40 and 43 claim processes similar to claim 1, and independent claims 46 and 48 claim golf balls similar to claim 16.

VI. ISSUES (37 C.F.R. § 1.192(c)(6))

Whether claims 15, 42 and 45 are indefinite under 35 U.S.C. §112, second paragraph; whether claim 16 is anticipated under 35 U.S.C. §102(b) by Newcomb (U.S. Patent No. 4,695,055); whether claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 are obvious under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055); whether claims 13, 14, 18, 19, 41 and 44 are obvious under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Bayer - RIM Part and Mold design (polyurethanes); whether claim 34 is obvious under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Molitor (U.S. Patent No. 4,674,751); whether claims 16 to 21, 23, 25, 29 to 36, 38 to 41, 43, 44 and 48 claim the same invention under 35 U.S.C. §101 as that of claims 14 to 20, 22, 27 to 32, 34 to 41 and 44 of copending Application No. 09/040,798; and whether claims 1 to 15, 22, 24, 26 to 28, 37, 42 and 45 to 47 are obvious under the judicially created doctrine of obviousness-type double patenting over claims 1 to 13, 21, 23 to 26, 33, 42 and 43 of copending Application No. 09/040,798.

VII. GROUPING OF CLAIMS (37 C.F.R. § 1.192(c)(7))

Claims 1 to 48 are pending, and are grouped as follows:

Claim 1 claims a process for making a golf ball comprising forming at least one of a cover and a core component of said golf ball by mixing two or more reactants together to produce a reaction product having (i) a flex modulus

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of from about 1 to about 310 Kpsi, and (ii) a reaction time of less than 2 minutes, wherein said at least one of said cover and said core component formed from said mixing operation has a thickness of at least about 0.01 inches. Claims 2 to 15 depend from claim 1 and claim additional limitations. Claims 1 to 15 stand or fall together.

Claim 16 claims a multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea. Claims 17 to 39 depend from claim 16 and claim additional limitations. Claims 16 to 39 stand or fall together.

Claim 40 claims a process for producing a golf ball including a step of (a) reaction injection molding a polyurethane/polyurea material to form at least one of a core layer and a cover layer of the ball. Claims 41 and 42 depend from claim 40 and claim additional limitations. Claims 40 to 42 stand or fall together.

Claim 43 claims a process for producing a golf ball comprising: (a) forming a core, (b) covering said core with a covering material to form a covered ball, and (c) coating and adding indicia to said covered ball, wherein at least one of steps (a) and (b) comprises reaction injection molding of a polyurethane/polyurea material. Claims 44 and 45 depend from claim 43 and claim additional limitations. Claims 43 to 45 stand or fall together.

Claim 46 claims a golf ball comprising at least one fast-chemical-reaction-produced layer, said layer having a flex modulus of 5 to 310 kpsi in a reaction time of 2 minutes or less and having a thickness of at least 0.01 inch. Claim 47 depends from claim 46 and claims additional features. Claims 46 and 47 stand or fall together.

Claim 48 claims a golf ball including a core and a cover, the cover comprising polyurethane/polyurea which is formed from reactants, wherein 5 to 100 weight percent of said reactants are obtained from recycled polyurethane/polyurea. Claim 48 stands alone.

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VIII. ARGUMENTS (37 C.F.R. § 1.192(c)(8))

1. **The Examiner's rejection of claims 15, 42 and 45 under 35 U.S.C. §112, second paragraph, as indefinite is erroneous and must be reversed.**

The Examiner has rejected 15, 42 and 45 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner stated that article claims cannot depend from process claims.

(See Office Action of November 14, 2002 pp. 2.)

A. Claim 15, 42 and 45 are not indefinite

Claims 15, 42 and 45 are not indefinite.

Appellant respectfully disagree with the Examiner and submit that article claims, such as a claim for a golf ball, frequently depend from process claims in issued patents. See for example, claims 3 and 4 of U.S. 6,444,442; claims 5 and 14 of U.S. 6,449,377; claim 8 of U.S. 6447,859; and claim 10 of U.S. 6,444,146 (copies of the claims were submitted in the Response filed on September 12, 2002). Each example is an article claim that depends from a process claim. It is clear from the claim language what is being claimed.

2. **The Examiner's rejection of claim 16 as anticipated under 35 U.S.C. §102(b) by Newcomb (U.S. Patent No. 4,695,055) is erroneous and must be reversed.**

The Examiner has rejected claim 16 as being anticipated under 35 U.S.C. §102(b) by Newcomb (U.S. Patent No. 4,695,055). The basis for the Examiner's rejection is as follows:

Claim 16 is rejected under 35 U.S.C. §102(b) as being anticipated by Newcomb (4,695,055). Newcomb discloses a golf ball formed from reaction injection molding (column 1, lines 36 to 40). The ball structure includes a homogeneous translucent plastic and a light stick inserted therein to make the golf ball multiple pieces. Note column 1, lines 55-57 which teach a polyurethane material for forming the ball.

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(See Office Action of November 14, 2002 p. 2.)

A. The Examiner's Cited Reference

U.S. Patent No. 4,695,055 to Newcomb is directed to a translucent plastic golf ball having a hole through the center of the ball to hold a light stick (Abstract and claims). Newcomb does not disclose a golf ball having at least a core and a cover, nor does Newcomb disclose a golf ball formed by reaction injection molding. Newcomb merely states that the golf ball can be produced by many different methods, such as cast molding, injection molding or reaction injection molding, but Newcomb does not actually teach a golf ball formed by reaction injection molding.

B. The Subject Matter of Claim 16 is Patentably Distinguishable Over the Cited Art

Claim 16 is not anticipated by Newcomb.

Appellant respectfully submits that Newcomb does not anticipate Appellant's claim 16, and Appellant respectfully disagrees with the Examiner's characterization of Newcomb. Newcomb discloses a translucent plastic golf ball having a hole through the center of the ball to hold a light stick. Contrary to the Examiner's assertions, Newcomb does not disclose a multi-piece golf ball, as defined by Appellant. The term multi-piece, or multi-layer, is well-known in the golf ball art. Appellant, at page 1, lines 22 to 24, defines a multi-piece golf ball as a core of one or more layers and a cover of one or more layers (i.e., at least two pieces, a core and a cover). The light stick that is placed in the center of the ball is not considered one of the pieces or layers, as defined by Appellant's specification. Additionally, in the unentered Response After Final Rejection, Appellant proposed an amendment to claim 16 to more clearly and explicitly claim that the multi-piece golf ball has at least a

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core and a cover layer. Newcomb does not disclose a golf ball having at least a core and a cover layer.

Furthermore, contrary to the Examiner's assertions, Newcomb does not disclose a golf ball comprising a reaction injection molded material comprising polyurethane/polyurea. Newcomb merely states that the golf ball can be produced by many different methods, such as cast molding, injection molding or reaction injection molding, but Newcomb does not actually teach a golf ball or golf ball component, such as a core or cover, formed by reaction injection molding. Additionally, Newcomb discloses thermoplastic polyurethane materials, not reaction injection molded polyurethane materials. The process and the golf ball of Newcomb are very different from Appellant's invention.

Appellant respectfully submits that for a prior art reference to anticipate, each and every element of the claims must be literally present. Appellant respectfully submits that contrary to the Examiner's assertions, Newcomb does not teach each and every element of Appellant's claim 16.

3. The Examiner's rejection of claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 as obvious under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) is erroneous and must be reversed.

The Examiner has rejected claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 as being unpatentable under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055). The basis for the Examiner's rejection is as follows:

Claims 1-12, 15-17, 20-33, 35-43 and 45-48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wu '673 in view of Newcomb. Wu discloses polyurethane golf ball parts (core or cover). Regarding claims 2, 3, 17, the polyurethane is a reaction product of a prepolymer and a curing agent. The prepolymer may include polyester or polyether. Regarding claims 31-33, the cover composition may further include zinc oxide, zinc sulfite, UV stabilizers, and/or optical brighteners. Regarding claim 9, the golf ball is about 1.68 inches and the

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cover is dimpled. Regarding claims 20, 21, the final golf ball may be painted (coating) and have nameplating (indicia). Wu does not disclose the polyurethane applied by reaction injection molding (RIM). Newcomb renders it obvious to mold the polyurethane layers of the primary reference golf ball by a RIM process, since such is an obvious expedient for providing the desired resiliency in a golf ball. Regarding claims 4 to 7, the particular details for the recited method are deemed conventional molding techniques that would necessarily be used in such molding process. Regarding claims 10, 11, 24-29, any other possible distinctions over the modified golf ball have been determined to be obvious lacking a showing of their criticality by a new and unexpected result. See *In re Aller et al.* 105 USPQ 233. It would be obvious to one skilled in the art to form the golf ball of Wu '673 utilizing the reaction injection molding method detailed by Newcomb and according to the instantly claimed numbers as the applicant has not shown that these particular numbers solve any stated purpose and it appears that the combination of Wu in view of Newcomb would accomplish similar purposes.

(See Office Action of November 14, 2002 pp. 3-4.)

A. The Examiner's Cited References

U.S. Patent No. 4,695,055 to Newcomb is directed to a translucent plastic golf ball having a hole through the center of the ball to hold a light stick (Abstract and claims). Newcomb does not disclose a golf ball having at least a core and a cover, nor does Newcomb disclose a golf ball formed by reaction injection molding. Newcomb merely states that the golf ball can be produced by many different methods, such as cast molding, injection molding or reaction injection molding, but Newcomb does not actually teach a golf ball formed by reaction injection molding.

U.S. Patent No. 5,334,673 to Wu discloses a golf ball with a specific type of polyurethane cover made from a polyurethane prepolymer and a slow-reacting polyamine curing agent and/or a difunctional glycol (Abstract and claims). Wu teaches that several curing steps are necessary to cure the cover (column 4, line 50 to column 6, line

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68). Wu does not disclose a golf ball component formed by RIM or a process for making a golf ball having the claimed processing parameters.

B. The Subject Matter of Claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 are Patentably Distinguishable Over the Cited Art

Claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48 are not obvious in light of the combination of Wu and Newcomb.

Appellant respectfully submits that the Examiner has failed to make out a *prima facie* case of obviousness. Wu discloses a golf ball with a specific type of polyurethane cover made from a polyurethane prepolymer and a slow-reacting polyamine curing agent and/or a difunctional glycol, and several curing steps are necessary to cure the cover. Wu does not disclose a golf ball component of any type formed by RIM or a process for making a golf ball having Appellant's claimed processing parameters.

Appellant respectfully submits that the Examiner has mischaracterized the Newcomb reference, and contrary to the Examiner's assertions, Newcomb does not "detail" a RIM molding method. At most, Newcomb only briefly mentions the RIM process as one of many methods that can be used to mold the golf ball. In the case of Newcomb, the golf ball is a translucent plastic, one piece golf ball. Newcomb does not disclose process conditions for any process type, such as RIM, the types of urethane, or more specifically, a process comprising the step of mixing at least two liquid precursors, nor does Newcomb disclose a multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea, or a golf ball comprising at least one fast-chemical-reaction-produced layer. Newcomb also does not disclose the claimed process parameters, but instead, only mentions a RIM process. As discussed above, Newcomb is directed to a translucent golf ball having a hole in the center to

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accommodate a light stick, and the golf ball is preferably made from a thermoplastic polyurethane material.

Appellant respectfully submits that the Examiner is assuming a fact that has not been shown to be in evidence. The Examiner is assuming that golf ball components, such as Appellant's core and/or cover or the components of the primary reference, Wu, can be produced using polyurethane materials and made by a RIM process, but the Examiner has not shown any teaching in Newcomb to support this assumption. As previously stated, the only teaching in Newcomb is a single reference to RIM as one of many process for making a golf ball, but there is no further discussion as to the benefits, process parameters, and the like. The Examiner has cited no reference or teaching showing that it would be "obvious to mold the polyurethane layers of the primary reference golf ball by a RIM process, since such is an obvious expedient for providing the desired resiliency in a golf ball" (Office Action of November 14, 2002, p. 3). The only possible teaching or suggestion for using a RIM process is found in Appellant's own disclosure.

Appellant respectfully submits that the Examiner has shown no motivation, suggestion or teaching for combining Newcomb with Wu. At most, it might have been obvious to try to make a golf ball using a RIM process, but this is not the standard for obviousness. One skilled in the art would not be motivated to make the golf ball of Wu using RIM since the entire focus of Wu is on a particular slow curing, multiple step process for making a thermoset polyurethane cover for a golf ball, and there is no motivation to combine Wu with Newcomb, which is directed to a one piece golf ball preferably made by injection molding a thermoplastic polyurethane. The only possible motivation comes from Appellant's own disclosure.

Appellant respectfully disagrees with the Examiner's statement that utilizing the RIM molding method detailed by Newcomb and

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according to the instantly claimed numbers would be obvious to one skilled in the art. First, as discussed above, Newcomb does not "detail" a RIM process at all. At most, Newcomb lists RIM as one of many types of processes for molding a one piece golf ball, but the remainder of Newcomb focuses on other methods of making a thermoplastic golf ball. Second, Appellant has shown that the RIM process does solve a stated purpose. The RIM process has several benefits not found in conventional molding processes, including, but not limited to: no separate mixer is needed to mix reactants; lower temperatures and pressures are used; the golf ball is more durable; and the RIM process is faster than conventional molding processes (see, for example, specification, page 31, line 15 to page 32, line 26).

Appellant respectfully submits that there is no teaching from the cited references to use a RIM process as claimed by Appellant to make a golf ball. Instead, the references, either alone or in combination, teach using more conventional methods such as casting or injection molding. Obviousness is tested by what the combined teachings would suggest to one of ordinary skill in the art, and absent some teaching or suggestion to support the combination, it cannot be established by combining prior art references to produce the invention. References can only be combined if there is some motivation or teaching to do so, and Appellant respectfully submits that the only suggestion or motivation for modifying Wu in the manner suggested by the Examiner stems from hindsight knowledge derived from Appellant's disclosure, and the use of hindsight knowledge to support an obviousness rejection is impermissible.

The Examiner's combination Wu and Newcomb is also impermissible hindsight reconstruction because the Examiner picked only the portion of the references that would support her position, to the exclusion of the other parts necessary to appreciate what the references suggest to one skilled in the art. A prior patent, such as Newcomb, must

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be considered as a whole. Choosing to focus on the portion of Newcomb that lists many processing options generally, with no particular process details or parameters, and choosing a particular type from them (i.e., RIM) is also selective blindness to the teachings of the reference, and this constitutes improper picking and choosing. The reference must be used as a whole.

The Examiner has failed to consider the primary reference, Wu, as a whole, focusing instead on only on the fact that the cover material is a type of polyurethane. By focusing on the cover type instead of the full intent and disclosure of Wu, the Examiner has ignored the clear teaching in Appellant's specification regarding improved RIM polyurethane covers and/or cores for golf balls. The Examiner has impermissibly made an inference that all polyurethane covers could be lumped together into one category and used interchangeably. The Examiner then cites a secondary reference, Newcomb, to provide a RIM process for making the polyurethane cover. The polyurethane cover of Wu could not be made by a RIM process as it is a very specific type of slow curing polyurethane.

The only guidance to combine the references is that supplied by the Examiner in making the rejection. There is no motivation or teaching to combine Wu with Newcomb. When the prior art references require a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than hindsight gleaned from the invention itself. Something in the prior art as a whole must subject the desirability of making the combination. The Examiner has failed to show the desire, or motivation, to combine Wu with Newcomb.

The Examiner's cited references neither teach nor suggest combining art for a process for making a golf ball or for a golf ball of independent claims 1, 16, 40, 43, 46 or 48.

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Claims 2 to 11, 15, 17, 20 to 33, 35 to 29, 41, 42, 45 and 47, which are dependent or ultimately dependent from claims 1, 16, 40, 43 and 46 and recite additional features, are also not obvious in light of the Examiner's cited references since no motivation exists in the Examiner's references.

4. The Examiner's rejection of claims 13, 14, 18, 19, 41 and 44 as obvious under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Bayer - RIM Part and Mold design (polyurethanes) is erroneous and must be reversed.

The Examiner has rejected claims 13, 14, 18, 19, 41 and 44 as being unpatentable under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Bayer - RIM Part and Mold design (polyurethanes). The basis for the Examiner's rejection is as follows:

Claims 13, 14, 18, 19, 41, and 44 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wu '673 in view of Newcomb as applied to claims 1-12, 15-17, 20- 33, 35-43 and 45-48 above, and further in view of Bayer - RIM Part and Mold design (polyurethanes). Wu discloses polyurethane golf ball parts (core or cover). Bayer teaches the use of glycolysis, a new way to convert polyurethane materials back to their original raw materials (page 43). One skilled in the art would have modified the invention of Wu in view of Newcomb by adding recycled material to decrease manufacturing costs.

(See Office Action of November 14, 2002 p. 4.)

A. The Examiner's Cited References

U.S. Patent No. 4,695,055 to Newcomb is directed to a translucent plastic golf ball having a hole through the center of the ball to hold a light stick (Abstract and claims). Newcomb does not disclose a golf ball having at least a core and a cover, nor does Newcomb disclose a golf ball formed by reaction injection molding. Newcomb merely

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states that the golf ball can be produced by many different methods, such as cast molding, injection molding or reaction injection molding, but Newcomb does not actually teach a golf ball formed by reaction injection molding.

U.S. Patent No. 5,334,673 to Wu discloses a golf ball with a specific type of polyurethane cover made from a polyurethane prepolymer and a slow-reacting polyamine curing agent and/or a difunctional glycol (Abstract and claims). Wu teaches that several curing steps are necessary to cure the cover (column 4, line 50 to column 6, line 68). Wu does not disclose a golf ball component formed by RIM or a process for making a golf ball having the claimed processing parameters.

Bayer – RIM and Mold Design (polyurethanes) is a technical brochure from Bayer discussing the use of RIM.

B. The Subject Matter of Claims 13, 14, 18, 19, 41 and 44 are Patentably Distinguishable Over the Cited Art

Claims 13, 14, 18, 19, 41 and 44 are not obvious in light of the combination of Wu and Newcomb, and further in view of Bayer – RIM Mold Design (polyurethanes).

As discussed above for claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, Appellant respectfully submits that the Examiner has failed to make out a *prima facie* case of obviousness. Appellant respectfully submits that the Examiner has shown no motivation, suggestion or teaching for combining Newcomb with Wu. At most, it might have been obvious to try to make a golf ball using a RIM process, but obvious to try is not the correct standard for obviousness. One skilled in the art would not be motivated to make the golf ball of Wu using RIM since the entire focus of Wu is on a particular slow curing, multiple step process for making a thermoset polyurethane cover for a golf ball, and there is no motivation, teaching or suggestion to combine Wu with Newcomb, which is directed to thermoplastic polyurethane one

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piece golf balls. The addition of another secondary reference, Bayer – RIM Part and Mold design (polyurethanes), does not remedy this defect.

Since, as discussed above, the Examiner's cited references neither teach nor suggest combining art for a process for making a golf ball or for a golf ball of independent claims 1, 16, 40, 43, 46 or 48, the addition of another reference, Bayer – RIM Part and Mold Design does not remedy this defect. Therefore, claims 13, 14, 18, 19, 41 and 44, which depend from claims 1, 16 or 40, are also not obvious over the combination of references.

5. The Examiner's rejection of claim 34 as obvious under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Molitor (4,674,751) is erroneous and must be reversed.

The Examiner has rejected claim 34 as being unpatentable under 35 U.S.C. §103(a) over Wu (U.S. Patent No. 5,334,673) in view of Newcomb (U.S. Patent No. 4,695,055) as applied to claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, and further in view of Molitor (U.S. Patent No. 4,674,751). The basis for the Examiner's rejection is as follows:

Claim 34 is rejected under 35 U.S.C. §103(a) as being unpatentable over Wu '673 in view of Newcomb as applied to claims 1-12, 15-17, 20-33, 35-43 and 45-48 above, and further in view of Molitor '751. Wu '673 in view of Newcomb does not disclose an ionomer blended with the polyurethane in the cover material. However, Molitor teaches a cover made from a urethane and an ionomer. One skilled in the art would have modified the cover by including an ionomer to improve the durability of the cover.

(See Office Action of November 14, 2002 p. 4.)

A. The Examiner's Cited References

U.S. Patent No. 4,695,055 to Newcomb is directed to a translucent plastic golf ball having a hole through the center of the ball to

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hold a light stick (Abstract and claims). Newcomb does not disclose a golf ball having at least a core and a cover, nor does Newcomb disclose a golf ball formed by reaction injection molding. Newcomb merely states that the golf ball can be produced by many different methods, such as cast molding, injection molding or reaction injection molding, but Newcomb does not actually teach a golf ball formed by reaction injection molding.

U.S. Patent No. 5,334,673 to Wu discloses a golf ball with a specific type of polyurethane cover made from a polyurethane prepolymer and a slow-reacting polyamine curing agent and/or a difunctional glycol (Abstract and claims). Wu teaches that several curing steps are necessary to cure the cover (column 4, line 50 to column 6, line 68). Wu does not disclose a golf ball component formed by RIM or a process for making a golf ball having the claimed processing parameters.

U.S. Patent No. 4,674,751 to Molitor discloses a golf ball comprising a cover comprising a blend of a thermoplastic urethane and an ionomer (Abstract).

B. The Subject Matter of Claim 34 is Patentably Distinguishable Over the Cited Art

Claim 34 is not obvious in light of the combination of Wu and Newcomb, and further in view of Molitor.

As discussed above for claims 1 to 12, 15 to 17, 20 to 33, 35 to 43 and 45 to 48, Appellant respectfully submits that the Examiner has failed to make out a *prima facie* case of obviousness. Appellant respectfully submits that the Examiner has shown no motivation, suggestion or teaching for combining Newcomb with Wu. At most, it might have been obvious to try to make a golf ball using a RIM process, but obvious to try is not the correct standard for obviousness. One skilled in the art would not be motivated to make the golf ball of Wu using RIM since the entire focus of Wu is on a particular slow curing,

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multiple step process for making a thermoset polyurethane cover for a golf ball, and there is no motivation, teaching or suggestion to combine Wu with Newcomb, which is directed to thermoplastic polyurethane one piece golf balls. The addition of another secondary reference, Molitor, does not remedy this defect.

Since, as discussed above, the Examiner's cited references neither teach nor suggest combining art for a process for making a golf ball or for a golf ball of independent claims 1, 16, 40, 43, 46 or 48, the addition of another reference, Molitor does not remedy this defect.

Therefore, claim 34, which depends from claim 16, is also not obvious over the combination of references.

6. The Examiner's rejection of claims 16 to 21, 23, 25, 29 to 36, 38 to 41, 43, 44 and 48 as claiming the same invention under 35 U.S.C. §101 as claims 14 to 20, 22, 27 to 32, 34 to 41 and 44 of copending Application No. 09/040,798 is provisional and can be addressed when there is otherwise allowable subject matter.

The Examiner has provisionally rejected claims 16 to 21, 23, 25, 29 to 36, 38 to 41, 43, 44 and 48 as claiming the same invention under 35 U.S.C. §101 as claims 14 to 20, 22, 27 to 32, 34 to 41 and 44 of copending Application No. 09/040,798. The basis for the Examiner's rejection is as follows:

Claims 16-21, 23, 25, 29-36, 38-41, 43, 44, and 48 are provisionally rejected under 35 U.S.C. §101 as claiming the same invention as that of claims 14-20, 22, 27-32, 34-41 and 44 of copending Application No. 09/040,798. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

(See Office Action of November 14, 2002 p. 5.)

A. The Rejection of Claims 16 to 21, 23, 25, 29 to 36, 38 to 41, 43, 44 and 48 is Provisional

The rejection of claims 16 to 21, 23, 25, 29 to 36, 38 to 41, 43, 44 and 48 under 35 U.S.C. §101 is provisional. As stated in the

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Response to Final Office Action, since this is a provisional rejection, the claims will be amended and/or canceled in the later issuing application if necessary once the other rejections have been overcome, and it is determined that there is allowable subject matter.

7. The Examiner's rejection of claims 1 to 15, 22, 24, 26 to 28, 37, 42 and 45 to 47 as obvious under the judicially created doctrine of obviousness-type double patenting over claims 1 to 13, 21, 23 to 26, 33, 42 and 43 of copending Application No. 09/040,798 is provisional and will be addressed when there is otherwise allowable subject matter.

The Examiner has rejected claims 1 to 15, 22, 24, 26 to 28, 37, 42 and 45 to 47 as obvious under the judicially created doctrine of obviousness-type double patenting over claims 1 to 13, 21, 23 to 26, 33, 42 and 43 of copending Application No. 09/040,798. The basis for the Examiner's rejection is as follows:

Claims 1-15, 22, 24, 26-28, 37, 42, and 45-47 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13, 21, 23-26, 33, 42 and 43 of copending Application No. 09/040,798. Although the conflicting claims are not identical, they are not patentably distinct from each other because the present invention and the '798 application both claim the process of making a golf ball comprising making at least a core and a cover component by mixing two or more reactants. The '798 application produces a product with a flex modulus from 5 to 310 kpsi in a reaction time of 5 minutes or less. The present invention produces a product with a flex modulus from 1 to 310 kpsi in a reaction time of less than 2 minutes. Varying the reaction time is an obvious modification of the '798 application that would promote the desired and/or optimal characteristics.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

(See Office Action of November 14, 2002 pp. 5-6.)

A. The Rejection of Claims 1 to 15, 22, 24, 26 to 28, 37, 42 and 45 to 47 is Provisional

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The rejection of claims 1 to 15, 22, 24, 26 to 28, 37, 42 and 45 to 47 for obviousness-type double patenting is provisional. As stated in the Response to Final Office Action, Appellant will file a terminal disclaimer to overcome the rejection once the other rejections have been overcome, and it has been determined that there is allowable subject matter.

IX. CONCLUSION

In view of the above, Appellant respectfully submits that claims 15, 42 and 45 are not indefinite, claim 16 is not anticipated, and claims 1 to 15 and 17 to 48 are non-obvious and patentable over the cited references. Accordingly, it is respectfully requested that the Examiner's rejection of claims 1 to 48 be reversed.

Respectfully submitted,

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APPENDIX A

The claims standing on appeal are:

1. A process for making a golf ball, said process comprising:
forming at least one of a cover and a core component of said golf ball by mixing two or more reactants together to produce a reaction product having (i) a flex modulus of from about 1 to about 310 Kpsi, and (ii) a reaction time of less than 2 minutes, wherein said at least one of said cover and said core component formed from said mixing operation has a thickness of at least about 0.01 inches.
2. The process according to claim 1, wherein said reaction product comprises at least one member selected from the group consisting of polyurethanes, polyureas, epoxies and unsaturated polyesters.
3. The process according to claim 1, wherein said reaction product comprises at least one member selected from the group consisting of polyurethane and polyurea.
4. The process according to claim 1, wherein said reaction product exhibits a reaction time of about 1 minute or less.
5. The process according to claim 4, wherein said reaction product exhibits a reaction time of 30 seconds or less.
6. The process according to claim 1, wherein said reaction product exhibits a demold time of 2 minutes or less.
7. The process according to claim 6, wherein said reaction product exhibits a demold of 1 minute or less.

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8. The process according to claim 1, wherein said cover is formed from said process.
9. The process according to claim 8, wherein said cover is a dimpled cover layer and said cover has a thickness of at least 0.02 inches.
10. The process according to claim 8, wherein said cover has a hardness of 10 to 95 Shore D.
11. The process according to claim 8, wherein said cover has a hardness of 30 to 75 Shore D.
12. The process according to claim 1, wherein said core component is formed from said process.
13. The process according to claim 2, further including a step of recycling at least a portion of said reaction product.
14. The process according to claim 13, wherein said reaction product is recycled by glycolysis.
15. The golf ball produced by the process of claim 1.
16. A multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea.
17. The golf ball according to claim 16, wherein said reaction injection molded material comprising polyurethane/polyurea includes at least one of ether functional groups and ester functional groups.

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18. The golf ball according to claim 16, wherein at least 5% of the polyurethane/polyurea is formed from molecules obtained by recycling a material comprising one of polyurethane, polyurea, polyester, and polyethylene glycol.
19. The golf ball according to claim 18, wherein said recycling occurs by glycolysis.
20. The golf ball according to claim 16, wherein said golf ball includes a core and a cover and at least said cover comprises reaction injection molded polyurethane/polyurea material.
21. The golf ball according to claim 20, wherein said golf ball includes an exterior coating surrounding said cover.
22. The golf ball according to claim 21, wherein said exterior coating is applied over said cover after molding of the cover.
23. The golf ball according to claim 20, wherein said core is selected from the group consisting of solid cores, multi-layer cores, wound cores, liquid filled cores, metal filled cores and foamed cores.
24. The golf ball according to claim 20, wherein said cover has a flex modulus of 1 to 310 kpsi.
25. The golf ball according to claim 20, wherein said cover has a flex modulus of 5 to 100 kpsi.
26. The golf ball according to claim 20, wherein the hardness of said cover is 10 to 95 Shore D.

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27. The golf ball according to claim 26, wherein the hardness of said cover is 30 to 75 Shore D.

28. The golf ball according to claim 27, wherein the flexural modulus of said cover is in the range 5 to 100 kpsi.

29. The golf ball according to claim 20, wherein the flexural modulus of said cover is higher than that of said core.

30. The golf ball according to claim 20, wherein said golf ball includes a multi-layer cover.

31. The golf ball according to claim 20, wherein said cover comprises a reaction injection molded material comprising polyurethane and further comprises at least one member selected from the group consisting of optical brightener, pigment, dye, antioxidant, and UV light stabilizer.

32. The golf ball according to claim 20, wherein said cover further comprises a filler material.

33. The golf ball according to claim 32, wherein said filler material includes at least one member selected from the group consisting of glass, metal, minerals, oxides, sulfides, titanates, polymeric resins and ceramics.

34. The golf ball according to claim 32, wherein said cover further comprises an ionomer.

35. The golf ball according to claim 20, wherein said cover exhibits a generally uniform consistency both at the seam and the poles.

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36. The golf ball according to claim 16, wherein said ball includes a core and a cover, and at least said core comprises a reaction injection molded polyurethane/polyurea material.

37. The golf ball according to claim 36, wherein said core comprises at least two components and at least one core component comprises reaction injection molded polyurethane/polyurea material.

38. The golf ball according to claim 16, wherein said ball includes a core and a cover, each of which comprises reaction injection molded polyurethane/polyurea material.

39. The golf ball according to claim 16, wherein said polyurethane/polyurea material includes meta-tetramethylxylylene diisocyanate.

40. A process for producing a golf ball including a step of (a) reaction injection molding a polyurethane/polyurea material to form at least one of a core layer and a cover layer of the ball.

41. The process according to claim 40, further comprising a step of (b) recycling at least 20% of the polyurethane/polyurea that is produced in connection with step (a) but which is not incorporated into the ball during that step.

42. The golf ball produced by the process of claim 41.

43. A process for producing a golf ball comprising: (a) forming a core, (b) covering said core with a covering material to form covered ball, and (c) coating and adding indicia to said covered ball, wherein at least one of steps (a) and (b) comprises reaction injection molding of a polyurethane/polyurea material.

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44. The process according to claim 43, further comprising a step of (d) recycling at least 20% of the RIM-produced material comprising polyurethane that was produced subsequent to step (a).

45. The golf ball produced by the process of claim 44.

46. A golf ball comprising at least one fast-chemical-reaction-produced layer, said layer having a flex modulus of 5 to 310 kpsi in a reaction time of 2 minutes or less and having a thickness of at least 0.01 inch.

47. The golf ball according to claim 46, wherein said ball further comprises a multi-layer cover and said at least one fast-chemical-reaction-produced layer is an inner cover layer.

48. A golf ball including a core and a cover, the cover comprising polyurethane/polyurea which is formed from reactants, wherein 5 to 100 weight percent of said reactants are obtained from recycled polyurethane/polyurea.